



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|   |   |                                 |
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| In re Application of: Jacobsen, E.N. et al.   | ) |                                 |
|   | ) |                                 |
| Serial No: 10/615,501   | ) | Group Art Unit: 1626            |
|   | ) |                                 |
| Filed: July 7, 2003   | ) | Examiner: Gerstl, R.            |
|   | ) |                                 |
| Title: <i>Nucleophilic Kinetic Resolution of Cyclic Substrates Using Silyl Azides</i> | ) | Attorney Docket No.: HUV-020.06 |
|   | ) | (19787-2006)                    |

**CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)**

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on **October 23, 2003**.

  
Shirine Darvish

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 C.F.R. §§ 1.56 and 1.97**

Sir:

Pursuant to 37 C.F.R. § § 1.56 and 1.97 (b)(3), Applicants submit herewith a Form PTO-1449 including a list of publications. Under 35 U.S.C. §120, the above-identified application has the benefit of the earlier filing date of the following parent applications: **Serial No. 10/206,143** filed on **July 26, 2002**; **No. 09/899,516** filed on **July 05, 2001** now **Patent No. 6,448,414**; **No. 09/134,393** filed on **August 14, 1998** now **Patent No. 6,262,278**; **No. 08/622,549** filed on **March 25, 1996** now **Patent No. 5,929,232**; and **No. 08/403,374** filed on **March 19, 1995** now **Patent No. 5,665,890**. Copies of the documents (References AA-DB) identified in the Form PTO-1449 are not provided because they were previously cited by or submitted to the Patent Office in prior patent applications; therefore, they are not required to be provided in this application. However, Applicants will gladly furnish copies of some or all of same upon request. Applicants

respectfully request that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached Form PTO-1449.

In compliance with the requirements of 37 C.F.R. §§ 1.56 and 1.97, Applicants have cited for the Examiner's consideration a co-pending U.S. patent application that is owned at least in part by the assignee of this application, which describes subject matter related to the present application. The co-pending application is listed herewith in accordance with M.P.E.P. 609 III.D which states: "Applicants may wish to list U.S. patent application numbers on other than Form PTO-1449 or PTO/SB/08A format to avoid the application numbers of pending applications being published on the patent. If a citation is not printed on the patent but has been considered by the Examiner in accordance with this section, the patented file will reflect that fact as noted in subsection III.C(2) above."

No copy of the co-pending application has been provided. If the Examiner wishes to have a copy of the co-pending application, the Examiner should contact the Attorney of record.

| <b>Our Docket #</b> | <b>Serial #</b> | <b>Date Filed</b> | <b>Title</b>                                       |
|---------------------|-----------------|-------------------|--|
| HUV-020.05          | July 26, 2002   | July 26, 2002     | Hydrolytic Kinetic Resolution of Cyclic Substrates |

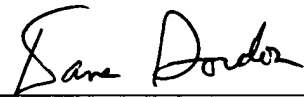
This submission does not represent that a search has been made or that no better art exists. Nor does it constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claim in the application and Applicants determine that the cited documents do not constitute "prior art" under United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents. Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents should one or more of the documents be applied against the claims of the present application.

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Under 37 C.F.R. § 1.97 (b)(3), this Information Disclosure Statement is being submitted before the mailing date of the first Office Action on the merits; therefore, no fees are believed to be due. However, the Commissioner is hereby authorized to charge any deficiencies or credit any overpayment from/to our **Deposit Account No. 06-1448, Ref. HUV-020.06.**

Respectfully submitted,  
Patent Group  
FOLEY HOAG LLP

By: 

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Dated: October 23, 2003

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|---|---|----------------------------------|
| Form PTO-1449<br><b>INFORMATION DISCLOSURE CITATION</b><br><b>IN AN APPLICATION</b><br><i>(Use several sheets if necessary)</i> | Docket Number (Optional)<br>HUV-020.06 (19787-2006) | Application Number<br>10/615,501 |
|   | Applicant<br>Jacobsen et al.                        |                                  |
|   | Filing Date<br>July 7, 2003                         | Group Art Unit<br>To be Assigned |

### U.S. PATENT DOCUMENTS

| EXAMINER<br>INITIAL | DOCUMENT NUMBER | DATE    | NAME               | CLASS | SUBCLASS | FILING DATE<br>IF APPROPRIATE |
|---------------------|-----------------|---------|--------------------|-------|----------|-------------------------------|
| AB                  | 3,868,401       | 02/1975 | Aratani et al.     | 260   | 468      |                               |
| AB                  | 4,151,195       | 04/1979 | Warnant et al.     | 260   | 465      |                               |
| AD                  | 4,471,130       | 09/1984 | Katsuki et al.     | 549   | 523      |                               |
| AD                  | 4,538,003       | 08/1985 | Tam                | 568   | 656      |                               |
| AE                  | 4,565,845       | 01/1986 | Inoue et al.       | 525   | 25       |                               |
| AF                  | 4,663,467       | 05/1987 | Kruper, Jr. et al. | 549   | 229      |                               |
| AG                  | 4,822,899       | 04/1989 | Grove et al.       | 549   | 533      |                               |
| AH                  | 4,870,208       | 09/1989 | Chan et al.        | 562   | 579      |                               |
| AI                  | 4,885,376       | 12/1989 | Verkade            | 556   | 18       |                               |
| AJ                  | 4,594,439       | 06/1986 | Katsuki et al.     | 549   | 523      |                               |
| AK                  | 4,965,364       | 10/1990 | Marko et al.       | 546   | 134      |                               |

### FOREIGN PATENT DOCUMENTS

|    | DOCUMENT NUMBER | DATE        | COUNTRY | CLASS | SUBCLASS | Translation |    |
|----|-----------------|-------------|---------|-------|----------|-------------|----|
|    |                 |             |         |       |          | YES         | NO |
| AL | EP 0 342 615    | Nov. 89     | EPO     |       |          | X           |    |
| AM | WO 91/14694     | Oct. 91     | PCT     |       |          | X           |    |
| AN | GB 2 244 055 A  | 20 Nov. 91  | PCT     |       |          |             | X  |
| AO | WO 93/03838     | Mar. 93     | PCT     |       |          | X           |    |
| AP | WO 96/28402     | 19 Sept. 96 | PCT     |       |          |             | X  |
| AQ | P9500057        |             | HU      |       |          |             | X  |

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*(Including Author, Title, Date, Pertinent Pages Etc.)*


|    |   |
|----|---|
| AR | Adam, W. et al., "Tridentate $\beta$ -Hydroperoxy Alcohols As Novel Oxygen Donors For The Titanium-Catalyzed Epoxydation of $\nu_1\delta$ -Unsaturated $\alpha$ , $\beta$ -Diols: A Direct Diastereoselective Synthesis Of Epoxiy Diols", Angew Chem. Int Ed, Engl 33(10):1170-1108 (1994). |
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| AT | Agarwal, D. et al., "Olefin Epoxidation Using Iron (III) Schiff Base Complexes As Catalyst ", Indian Journal of Chemistry 31A : 785-787 (1992).   |

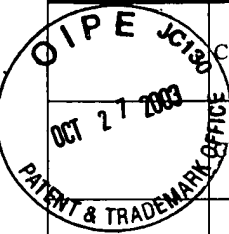
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| EXAMINER | DATE CONSIDERED |
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.


| Form PTO-1449<br><b>INFORMATION DISCLOSURE CITATION<br/>IN AN APPLICATION</b><br><i>(Use several sheets if necessary)</i>   |                 |  | Docket Number (Optional)<br>HUV-020.06 (19787-2006) |       |                 | Application Number<br>10/615,501 |  |  |
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| <b>U.S. PATENT DOCUMENTS</b>  |                 |  |   |       |                 |                                  |  |  |
| EXAMINER<br>INITIAL   | DOCUMENT NUMBER | DATE   | NAME  | CLASS | SUBCLASS        | FILING DATE<br>IF APPROPRIATE    |  |  |
|   | AU              | 5,093,491  | Ellis, Jr. et al.                                   | 540   | 135             |                                  |  |  |
|   | AV              | 5,126,494  | Gilheany et al.                                     | 568   | 807             |                                  |  |  |
|   | AW              | 5,250,731  | Burk  | 564   | 150             |                                  |  |  |
|   | AX              | 5,254,704  | Takano et al.                                       | 549   | 552             |                                  |  |  |
|   | AY              | 5,258,553  | Burk  | 568   | 12              |                                  |  |  |
|   | AZ              | 5,296,595  | Dolye   | 540   | 200             |                                  |  |  |
|   | BA              | 5,310,956  | Takano et al.                                       | 549   | 529             |                                  |  |  |
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|   | BF              | 5,665,890  | Jacobsen et al.                                     | 549   | 230             |                                  |  |  |
|   | BG              | 5,929,232  | Jacobsen et al.                                     | 540   | 145             |                                  |  |  |
|   | BH              | 6,262,278  | Jacobsen et al.                                     | 549   | 230             |                                  |  |  |
|   | BI              | 6,448,414  | Jacobsen et al.                                     | 549   | 230             |                                  |  |  |
| <b>OTHER DOCUMENTS</b> <span style="float: right;"><i>(Including Author, Title, Date, Pertinent Pages Etc.)</i></span>  |                 |  |   |       |                 |                                  |  |  |
|   | BJ              | Barili, P. et al., "Regio- and Stereochemistry Of The Acid Catalyzed And Of a Highly Enantioselective Enzymatic Hydrolysis of Some Epoxyterahydrofurans", Tetrahedron 49(28): 6263-6276 (1993).  |   |       |                 |                                  |  |  |
|   | BK              | Brandes, B. and E. Jacobsen, "Highly Enantioselective, Catalytic Epoxidation Of Trisubstituted Olefins", J. of Am. Chem. Soc. 59: 4378-4380 (1994).  |   |       |                 |                                  |  |  |
|   | BL              | Chang, S. et al., "Effect of Chiral Quaternary Ammonium Salts On (Salen) Mn-Catalyzed Epoxidation Of Cis-Olefins. A Highly Enantioselective, Catalytic Route to Trans-Epoxides" J. Am. Chem. Soc. 116 (15): 6937-6938 (1994).  |   |       |                 |                                  |  |  |
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| <b>OTHER DOCUMENTS</b> <i>(Including Author, Title, Date, Pertinent Pages Etc.)</i>   |   |   |                                  |
|   | BN  | Collman, J. et al., "Regioselective and Enantioselective Epoxidation Catalyzed by Metalloporphyrins", Science, 261:1404-1411 (1993).  |                                  |
|   | BO  | Collman, J. et al., "Enantioselective Epoxidation Of unfunctionalized Olefins Catalyzed By Threitol-Strapped Manganese Porphyrins", J. of Am. Chem. Soc. 115:3834-3835 (1993).  |                                  |
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| <b>OTHER DOCUMENTS</b> <span style="float: right;"><i>(Including Author, Title, Date, Pertinent Pages Etc.)</i></span>  |  |  |                                  |
|   | CC   | Leighton, J. et al., "Efficient Synthesis of (R)-4-((Trimethylsilyloxy)-2-Cyclopentenone by Enantioselective Catalytic Epoxide Ring-Opening", Journal of Organic Chemistry vol. 61: No1, pp 389-390 (1996).          |                                  |
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|   | CE   | Marangoni, G. and B. Pitteri "Crystal Structure of Cationic Square Planar Platinum (II) Complexes Containing The Tridentate Chelate Ligand 2,6-Bis(methylthiomethyl)Pyridine ", Polyhedron 12(13):1669- 1673 (1993). |                                  |
|   | CF   | Martinez, L. et al., "Highly Enantioselective Ring Opening of Epoxides Catalyzed by (Salen) Cr(III) Complexes", J. Am. Chem. Soc. 117:5897-5898 (1995).  |                                  |
|   | CG   | Maruoka, K. et al., "An Efficient, Catalytic Procedure For Epoxide Rearrangement", Tetrahedron Letters 30(41): 5607-5610 (1989).   |                                  |
|   | CH   | Maruyama, K. et al., "Cobalt Schiff Base Complex Catalysed Solvolytic Ring Opening of Epoxy Compounds", React. Kinet. Catal. Lett. 45(2): 165-171 (1991).  |                                  |
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|   | CJ   | Nugent, W. et al., "Beyond Nature's Chiral Pool: Enantioselective Catalysis In Industry", Science 259:479-483 (1993).  |                                  |
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|   | CL   | Oppolzer, W. and R. Radinov, "Enantioselective Synthesis of Sec-Allyl alcohols by Catalytic Asymmetric Addition of Divinylzinc To Aldehydes", Tetrahedron Letters, 29(44): 5645-5648 (1988).                         |                                  |
|   | CM   | Ozaki, S. et al., "Synthesis of Chiral Square Planar Cobalt (III) Complexes and Catalytic Asymmetric Epoxidation With These Complexes", J. of Chem. Soc. Perkin Trans. 2, Issue 1: 353-359 (1990).                   |                                  |
|   | CN   | Palucki, M. et al., "Highly Enantioselective, Low-Temperature Epoxidation of Styrene", J. Am. Chem. Soc. 116: 9333-9334 (1994).  |                                  |
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|   | CS | Srinivasan, K. et al., "Epoxidation of Olefins With Cationic (Salen) Mn III Complexes. The Modulation of Catalytic Activity By Substituents ", J. Am. Chem. Soc. 108:2309-2320 (1986).   |                                  |
|   | CT | Stinson, S. " Chiral Drugs ", Chemical and Chemical Engineering News , pp 46-79 (September 28, 1992).  |                                  |
|   | CU | Tokunaga et al., " Asymmetric Catalysis With Water: Efficient Kinetic Resolution of Terminal Epoxides by Means of Catalytic Hydrolysis", Science , 277:936-938 (1997).                   |                                  |
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|   | CX | Yamashita, H. "Metal(II) d-Tartrates Catalyzed Asymmetric Ring Opening Of Oxiranes With Various Nucleophiles", The Chemical Society of Japan 61: 1213-1220 (1988).                       |                                  |
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|   | CZ | Zhang, W. and E. Jacobsen, "asymmetric Olefin Epoxidation With Sodium Hypochlorite Catalyzed by Easily Prepared Chiral Mn (III) Salen Complexes ", J. of Org. Chem. 56:2296-2298 (1991). |                                  |
|   | DA | International Search Report completed November 18 1999 and mailed December 12, 1999.   |                                  |
|   | DB | International Search Report completed 17 July 1996 and mailed 25 July 1996.  |                                  |
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